

THE TURTLEDOVES IN PERTH

D.L.S., "Relative Abundance of Birds in King's Park," *Emu*, 37: 271, gives the percentage frequency of the Indian Turtle dove as 53.3% and of the Senegal Turtle dove as 30%.

L.E.S. approximates the over-all ratio of 70 Indian Turtle doves to 30 Senegal Turtle doves, but this varies from place to place being 90:10 at Hardy Street, Nedlands; 0:100 at the Zoology Department, University of W.A., and 50:50 at Main Block, University. At Guildford the doves are predominantly Senegal Turtle doves. These discrepancies may be due, he considers, to some ecological preference or may be the outcome of a territorial organisation of roosting flocks.

Counts by E.H.S. at Government Gardens, Perth, gave a ratio of 37:63.

At Wesley College, L.E.S. and P.S. found the Indian Turtle dove much the more frequent of the two species. Between March 18 and March 27, 1947, these observers made six counts working independently. The highest number counted was 98, the lowest 45 and the average of all the counts was 67.5. Counts were made at 1825 hours while the birds were preparing to roost in the pine trees near the College. In October of the same year a young bird, saturated by prolonged rain, was found under the pines and cared for until sufficiently recovered to fly. Before released it was banded with an improvised band. It was seen a fortnight after release and again "considerably later" (but not after May 3, 1948).

(To be concluded)

FAIRY MARTINS IN SOUTH-WESTERN AUSTRALIA

By ERIC H. SEDGWICK, Collie.

The *Birds of Western Australia* (Serventy and Whittell) indicates that the Fairy Martin (*Hylochelidon ariel*) may be encountered widely outside of the heavily forested area of the South-West. This distribution is borne out by my own records.

In the South-West the species appears to be relatively infrequent. S. A. White, *Emu*, 20, p. 124, writing of the South-West generally, described the species as "uncommon" and Orton and Sandland, *Emu*, 13, as "rare in the Moora district". Comparatively few of the published bird lists include the Fairy Martin and little has been written on the species in Western Australia.

On the other hand, C. L. Jenkins in "Birds of Northam," *Emu*, 31, p. 33, described the nests of this species as "not uncommon under culverts and bridges" but noted that the colonies were small as compared with those he had encountered in the Eastern States. Jenkins also mentioned, significantly, that the species is hard to distinguish from the Tree Martin (*H. nigricans*).

This last factor may have had an important effect upon the records; this species could easily be overlooked. To my ear the call is, as stated in the *Birds of Western Australia*, higher pitched than that of the Tree Martin, and I have thought frequently that

the rump appears whiter in the field. In short, I should say that the birds can usually be separated, but the difference is subtle and unless the bird is seen perched at close quarters, or unless nests are located, the observer is wise to treat his identification as provisional. This difficulty of field identification may account in part for the infrequency of Western Australian records as there is no doubt but that the Tree Martin is the common South-West Martin.

PERSONAL RECORDS AND OBSERVATIONS

While residing at Nangeenan (1932-1937) I received reports of mud-nests, apparently of the Fairy Martin type, built under the concrete work of the Goldfields pipeline, but was unable to confirm this for myself. (Years later, on January 20, 1953, near Nokanning, eight miles north of Nangeenan, I saw the old foundations of eight nests under an overhanging portion of a concrete building in the R.A.A.F. Explosives Area.)

However, on May 9, 1936, whilst travelling by road from Kellerberrin to Quairading, I stopped at Mount Stirling, a huge granite outcrop, and there in a shallow cave found five old nests. No birds were present, and although I re-examined the area on September 4, 1936, and on January 24, 1937, I obtained no further evidence of the presence of Fairy Martins.*

Early in 1942 my son, Lindsay, showed me the remains of a few—probably three—old nests built in the side of a small but fairly deep gravel pit on the outskirts of Dargin, and in the same general locality, on September 2, 1942, I had my first encounter with the bird itself in Western Australia when I saw a flock just to the west of the township. One of the birds entered a road culvert, where two half-constructed nests were located. Another culvert under the railway line at about 200 yards distance suggested the possibility of another nesting place, but I could not stop to investigate. However, on October 10 my wife examined the area and wrote to me: "There are several nests of the proper sort under the road bridge, but we could not see any under the old railway culvert. The birds were not flying about as they were the day you saw them; there did not appear to be any birds about, but there were at least five nests . . . and one which was unfinished or broken."

* An early record of Fairy Martins nesting in this district is given by T. W. Hardy, "Journal of an Expedition over General Darling's Range," in *Journals of Several Expeditions made in Western Australia*, ed. J. Cross, London, 1833. Referring to a hill which he called Mt. Elizabeth he writes: "We likewise found an arched piece of rock, with several birds' nests adhering to the top. From their peculiar construction and composition, I judge they belong to the swallow tribe but very different from those seen in England." The date was October 31, 1830. Mt. Elizabeth does not appear on modern maps but Mr. C. A. Gardner (Government Botanist) believes it to be identical with the hill now known as Mt. Caroline (1,082ft.), which is $7\frac{1}{2}$ miles from Mt. Stirling.

On June 21, 1943, and on April 25, 1945, I noted birds at Dangin that were probably of this species. On the second occasion a number of nests were under the double cement railway culvert. Most of the nests were in one tunnel of the culvert. There were 47 along one side and 47 along the other side, counting only the remains of nests which could have been occupied simultaneously and leaving out of account a number of foundations that had obviously been built over. These built-over sites may have been foundations from a previous year or may have been nests of the same season which had been destroyed and the sites reoccupied.

In the other tunnel I found only six nests, all on one side.

Most of the nests were in the angle between the sides and roof of the square-built culvert. Some five or six were built lower, attached to nests in the angle.

A number of mud pellets were attached to the walls of the second tunnel. These may have been the remains of still further nests of (probably) an earlier season, but had not quite that appearance. To me it appeared to be a case of multiple nesting, the birds having become confused by the two identical tunnels immediately adjacent to one another.

(During late August and early September, 1956, I revisited all known nesting sites near Dangin, including one located to the east of Dangin by M. Littlejohn a few years ago, but found no trace of recent activity. It should be noted, however, that the period was a little early for 1956 nesting.)

At Wangan Hills, Martins were reported as nesting in an old quarry. There, on April 7, 1945, I located the sites of about 14 nests under an overhanging rock.

On August 29, 1946, whilst travelling between York and Speneer's Brook, I noted Martins, disturbed presumably by the passing of the diesel coach, leaving culverts under the railway line. This behaviour suggested Fairy Martins rather than Tree Martins, a supposition supported by the general appearance of the birds.

One month later, on September 24, I saw Fairy Martins flying in and out of two separate rail culverts between Bilbarin and Corrigin.

On September 29 I found a flock of Martins over the railway yard at Bilbarin. Though my notes on the breeding of these birds are far from complete, they may provide material for comparison when more detailed studies are made, so I present them in unabridged form.

Sept. 9, 1946: A number of Fairy Martins were passing in and out of a culvert where there appeared to be a foundation of at least one nest. Water is still lying under the culvert, so it was not convenient to examine it more closely. Last summer there was no indication that this culvert had been used by Fairy Martins. The Martins were also to be seen over and near the dam which is adjacent to the railway yards.

Oct. 6, 1946: Several nests may now be seen in the culvert mentioned in the last note. At least one is complete externally.

The birds were industriously scooping up mud from the edge of the pool of water that lies under the culvert. Numbers up to 12 were seen so engaged. The total colony would consist of at least 30 birds.

Oct. 20, 1946: Water at the nesting culvert is now reduced to a pool at one end. Today I examined the nests closely for the first time. There are 19 complete nests, nine nests under construction and at least six nests fallen. These last may have been dislodged by vibration from trains passing overhead—trains and diesel coaches pass over the culvert at least 15 times a week. Fallen nests which were examined had grass linings and one contained two eggs which had been broken, I suppose, by the fall of the nest. "Spouts" of the completed nests curved outwards towards one end or other of the culvert—usually the nearer end. Pellets may be seen all along the walls 4 or 5 in. below the roof.

Nov. 3, 1946: Only one complete nest remains on the S.W. wall of the culvert, a number having fallen. (On Oct. 20 there were six complete or under construction.) None remains on the central dividing wall (there were seven) and only eight complete nests remain on the N.E. wall (there were 15).

[Cf. I. C. Carnaby, "Birds of Lake Grace," *Emu*, 33, p. 107: "I found several small colonies of these under rail culverts at Burngup. One consisted of ten nests, mostly newly built, with eggs. The jar of the train passing over had dislodged quite a few nests and others were in the process of dislodgement."]

The bottom of the culvert was littered with broken nests and some lining material, but from the end of the culvert I could see no eggs or young. My impression was that only a few birds of the flock remain—perhaps only those which have complete nests.

Nov. 17, 1946: There is now only one nest on the S.W. wall of the culvert, one on the central dividing wall and four on the N.E. wall. The nest on the central wall must have been built since the previous observations, but the other nests could be of earlier construction. All the nests were towards the end of the culvert under the siding loop line and not under the main line which carries the through traffic. Owing to a railway strike there have been no trains since the 7th. I saw only one bird in the air near the culvert, but others may have been sitting.

Nov. 24, 1946: Again inspected nests, this time from the N.W. end of the culvert and not from the S.E. end as before. The number of nests has apparently remained unaltered for the past week. I noted, however, that there were five nests on the N.E. wall and not four as stated in the last note, but one of these nests could easily have been overlooked when inspecting from the other end of the culvert. A small pool of water still remains alongside of the culvert, but this will soon be dry unless further rain falls. The rail strike is over and the first trains will run tomorrow. I counted six birds in the air over the culvert.

Dec. 1, 1946: Only the five nests on the N.E. wall remain. The two fallen nests had been well lined with dry grass and white feathers which had almost undoubtedly come from some domestic

fowls which range within 100 yards of the culvert. One broken nest contained a portion of an eggshell which could have come from an egg which had hatched. One of these nests could not have been complete for much more than three weeks. Trains have been running as usual, though so far as I know the loop has not been used. I saw two birds in the air.

Dec. 15, 1946: Two nests remain. No birds were observed.

My more recent notes refer to occurrences in the lower rainfall areas.

At the 1948 R.A.O.U. Murchison River Camp, six groups of nests were found in three different localities, the groups numbering 47, 12, 2 or 3, 25, 30 and 30. The original notes of the official account, *Emu*, 48, p. 230, were amended to read "all approximate" in respect of the last three figures, but the counts were, in fact, made as exactly as possible.

At Leonora the only Martins which I identified to my complete satisfaction were of this species.

In February, 1949, several disused nests were located in the vicinity of the old Tower Hill mine. These nests, situated in six old shafts, were in 13 groups totalling 81 nests, not necessarily contemporary. All were within about 100 yards of a water-course, which under favourable circumstances could have provided nesting material. Nest linings comprised fine plant stems and feathers—possibly from a domestic fowl and mainly white—up to six inches in length.

A NEST ANALYSIS

One Bilbarin nest which had fallen and remained almost intact I brought away for detailed examination. With it I brought two fragments to represent the missing portion of the nest. These showed, more than usually distinctly, the pellet structure. One fragment appeared to contain 50 pellets and the other 100 to 110. The ratio of the weight of these fragments to the weight of the whole nest suggests that the entire structure contained at least 1,100 and probably about 1,300 pellets.

The count of the pellets was based on the assumption that the sample sections were only one pellet deep. As the sections were thin, this seemed feasible. (This view appears to be confirmed by H. B. Boss Walker, *Emu*, 31, p. 286, who, describing the Fairy Martin's method of nest building, writes: "Each beakful, however, would be confined to a part of the rim and be visible afterwards as one of the knobs with which the outside of the nest is studded.")

One of the fragments I dampened in the hope of separating the original pellets but it immediately crumbled to a fairly fine mud containing some fibrous material.

The second fragment I placed in a warm oven for some hours. It was, apparently, unaffected.

Measurements of the nest were as follows:—Outside width, 6.75 in.; inside width, 5.00 in.; inside depth, 4.50 in.; length of spout, 5.00 in.; internal diameter of entrance, 0.90 x 1.10 in.; thick-

ness of walls of spout, 0.75 in.; thickness of walls of nest, 0.50 in.; thickness of bottom of nest, 0.75 in.; attachment area, rear, 15.75 sq. in.; attachment area, top, 20.25 sq. in.

The walls of the nest widened towards the top and rear from 0.5 in. to 0.75-1.00 in., hence the relatively large attachment area. The "spout" was roofed even where it had been attached to the top of the culvert, the roof of the spout contributing four square inches to the attachment area. The total weight of the nest was 2.75 lb. There was a depression in the bottom of the nesting chamber which had evidently been lined—some lining material was embedded in the mud.

OTHER RECORDS

Fairy Martins have also been recorded from the following localities not mentioned in the foregoing notes:—

Moore River (near Mogumber), F. L. Whitlock, *Emu*, 4, p. 132.

Gingin, D. L. Serventy, *Emu*, 28, p. 65.

Irwin Valley, D. L. Serventy, *Emu*, 28, p. 195.

Belmont, D. L. Serventy, *Emu*, 47, p. 276.

Bunketch, D. Reid, *W.A. Nat.*, 3, p. 70.

Frankland River, H. M. Whittell, *W.A. Nat.*, 3, p. 75.

Morawa, S. R. White, *W.A. Nat.*, 3, p. 104.

York, V. N. Serventy, *W.A. Nat.*, 3, p. 122.

Weam, R. Carrick, unpublished.

Chester Pass, Stirling Ra., L. E. Sedgwick, unpublished.

Barnong Station (Gullewa), D. L. Serventy, unpublished.

SUMMARY

The writer's experiences with *Hylochelidon ariel* in the south-western portion of Western Australia confirm the generally accepted distribution and status of the species.

Two of the larger nesting colonies—at Dangin and at Bilbarin—are described in some detail, and one nest analysed.

Limited evidence suggests that these S.W. birds take up breeding stations in late August or early September and almost immediately commence nesting, the season continuing until mid-December.

No information on activity during the non-breeding season has been obtained, suggesting that the populations encountered were migratory or at least nomadic.

FROM FIELD AND STUDY

Hooded Dotterel near Fremantle.—Since the Swan coastal plain is in the northern part of the distribution range of the Hooded Dotterel (*Charadrius cucullatus*) this species is rarely seen in the vicinity of Fremantle (D. L. Serventy, *Emu*, 47: 265). On February 3, 1957, along the beach between Woodman Point and Coogee Beach, five miles south of Fremantle, P. S. Stone and I saw eleven Hooded Dotterels of which eight were fully plumaged.

Along the same stretch of coastline I have frequently observed up to eight Pied Oyster-catchers (*Haematopus ostralegus*), a species that has disappeared from most beaches in the Swan River